Manual for mounting and use

STRATOS 07 S.R.O.

RESCUE BALLISTIC PARACHUTE SYSTEMS
SERIES MAGNUM

User of this system is obliged to get acquainted with this manual !

Read please this manual attentively and whole and only before you begin either to handle in any way the rescue system, or you board an aircraft with the system MAGNUM built in!
In the manual you will be informed how to manipulate with the system safely, in order not to menace the life of you, or of your surroundings and how to install it to work properly.
Last but not least you will get to know how and in which situations to use it, for rescuing your life.

PART 2. USE OF THE RESCUE SYSTEM

Rescue systems MAGNUM give you a chance of rescue in crisis fly-situations even at a low altitude. It is rewarding to use them nearly in every critical situation!

2.1 Situations when it is possible to use the rescue system MAGNUM:

1) Engine failure over a rugged terrain: where it is not possible to land safely. You must activate the rescue system MAGNUM in time with respect to its technical parameters especially with regard to the producer-defined minimal altitude of use! (In case you have time before the landing, switch off all electric circuits and close the main fuel pipe, or change over to the tank with less fuel!)

2) Loss of aircraft control: a) because of a technical defect b) loss of piloting control during bad weather conditions c) loss of piloting control on other reasons. You must activate the rescue system MAGNUM in time with respect to its technical parameters and to the minimal altitude of use! Pay attention to strong wind! After the landing leave immediately the aircraft! (In case you have time before landing, switch off all electric circuits and close the main fuel pipe , or change over to the tank with less fuel!)

3) On pilots health problems of a nature not allowing him to continue the flight safely (heart attack etc.)
   In such a situation does the activation of MAGNUM the pilot, or the fellow traveller, who has to be informed of the rescue system function before the flight! The resolution of the activation must be reached in the shortest time, but if it is possible with respect to the choice of a safe landing place! This situation justifies apart from other things the location of the main activation lever on a place easily available from both seats, or the installation of two activation levers, especially at the arrangement of the pilots, when they are sitting one behind the other! (In case you have time before the landing, switch off all electric circuits and close the main fuel pipe, or change over to the tank with less fuel!)

4) The loss of the pilots orientation because of bad meteorological conditions, threatening of a crash with an obstacle, during reduced visibility, the fuel quantity does not make it possible to reach a safe landing place.
   If it is possible to activate the rescue system over such an area where there are on the earth no obstacles as electric lines, buildings, rocks, etc.
   Do keep the minimal recommended altitude for activation of your MAGNUM. Attention, in bad weather and during reduced visibility may be your estimates very distorted! This is double valid for flying in winter in a snow-covered landscape! (In case you have time before landing, switch off all electric circuits and close the main fuel pipe, or change over to the tank with less fuel!)

5) Mechanic defect makes impossible safe continuing of the flight and a safe landing. With the system MAGNUM are registered rescues with the propeller destruction, engine failure after the start in a low altitude, engine failure in a low altitude over the town build-up area, steering system locking, loose of steering flaps , loose of wings during the fly into the turbulence area behind a strong fighter or bomber, by loose of lifting surfaces due to the flying through areas with a strong turbulence at high speed, by aircraft fall due to emergence of strong icing, etc.

In all these and similar cases were the crews rescued due to their immediate decision to activate the rescue system MAGNUM. Think of it, in cases of aerodynamic violation of your aircraft and especially of its asymmetrical nature could come such a flight mode, when the centrifugal forces would prevent during the fall any your movement of arms and so as well the activation of the rescue system! (In case you have time before landing, switch off all electric circuits and close the main fuel pipe, or change over to the tank with less fuel!)

There are much more situations, when you could successfully use the rescue system MAGNUM. But it is possible to apply on them the above-mentioned instructions.

2.2.Duties of the owner and the pilot of an aircraft provided with the rescue system MAGNUM:

The owner or the pilot has to read completely this manual before the mounting of MAGNUM on the aircraft, or before the flight with an aircraft mounted with the rescue system MAGNUM! Of the function of the rescue system must be informed the fellow passenger as well! For the information of the fellow passenger is responsible the pilot.

Attention! Disregard of the instructions mentioned in this manual could cost you your life!

PART 3. INFORMATION OF THE RESCUE SYSTEM MAGNUM, DESCRIPTION OF ITS FUNCTION

The rescue systems of the series MAGNUM are designed in order to let their construction to secure a correct function with a reserve and to give the largest opportunity for the rescue without any consequence.

The parachute canopies are lifted as to the type by specially designed and tuned rocket engine. Burning time moves from 0.5 – 0.6 s (according to the type of the rocket engine of the rescue system and the relevant ambient temperature in the time of its use). The rocket engine is placed in the rocket case, After its activation by the activity handle is the movement mechanically transported by a Bowden cable on a percussive device, which activates two percussion caps and they the load in the rocket box. By influence of the load burning comes to the production of gas, that escapes under a high pressure from the rocket box out, the rocket moving takes place in the direction out of the aircraft. The rocket breaks the specially adjusted hole coat in the aircraft cover. The rocket has a cutting point enabling the breaking through softer materials. The gases come out, the rocket pulling cable releases the cap of the parachute container. Out from the container is pulled the parachute protected by the sliding sleere. After its lifting takes place the pushing back of the sliding sleere and the canopy load.

Canopies of the rescue systems MAGNUM are designed to be filled in the shortest possible time, but with maximum possible impact muffling during the canopy load It is necessary to know, that rescue systems designed for higher speed need a longer time to open. They must open continuously and gradually to secure a gradual speed lowering and a possibly smallest over- gravity (dynamic impact).

3.1. Types of system designs

1) MAGNUM systems are supplied in the design, when they are impressed into a duralumin cylindrical container covered by a coat, with the rocket case fastened firmly on it, or with a moving rocket case with this it is possible to aim to the sides. The container is fastened to the aircraft by two stainless strips and a stainless universal prismatic support with four screws M-8.
2) In the system design Softpack is the parachute placed in a cloth container. This has

on the back part two, on several places quilted straps that enable to stick it to the aircraft in various places of the strap, convenient to the frame of every aircraft where it should be mounted. The container must be fastened on every side minimally on two places in whole minimally on four places and it by a safety strip, a belt or a line each of min. strength 100 kg. They must be carefully secured against the loosening!
The Softpack should lie on an underlay as to do not extremely strain its suspensions. The case with the rocket is fastened by four screws M-5 to the firm structure of the aircraft. The connection between the parachute and the rocket is secured by a steel hauling cable shaped as"V". Thus is the rocket cable connected with the pull cable of the parachute with a silencer by a screwing strength snap-hook. The activation handle is connected with the rocket motor launcher by a high strength Bowden cable with Teflon surface inside. A Bowden cable of such construction secures smooth running of the cable inside and prevent enough the accidental launching of the system because of its unwilling load (caused by outside strength, a step, etc....)

3) The system placed in a laminate container is designed for float seaplanes. The rocket case is flexible and is anchored on the back side of the container.

3.2. MAGNUM rescue system launching

Before the flight during the pre-start operations and the whole time of the flight must be the rescue system released! Do not forget to remove from the activity handle the lock or the locking pin!
Through pulling the activity handle comes to its releasing from the safety handle catch. Follows the free safety running of approx. 3-5cm. During the continuation of pulling grows moderate resistance till maximal strength of 12 kg. The motion transported by the Bowden cable to the launch winds up a mechanic chiming device. When it reaches the top dead center, is the chiming spring maximum compressed, starts the firing pin that activates ignition of two primers and they start the ignition of the power ignition and the burning of the firm fuel. The whole device is designed to work reliably, to be most simple and without unnecessary structural complications. After the rocket motor launch nothing falls from it (excepted the plastic limiting fitting piece and the rubber coat of the rocket case, protecting the rocket from the water). The reverse impact on the rocket case is minimal, it is not necessary to install any steps to deflect the gases from the rocket motor. The combustion curve of the rocket motor is designed to pull out to parachute most quickly and with a sufficient reserve. The rescue system MAGNUM is constructed so, that the gradual pull out of the canopy by the rocket motor is accelerated by the effect of aerodynamic forces during the aircraft motion. This construction helps to a more quick pulling out and unrolling of the parachute.
The canopy hidden in the canopy cover is by the rocket motor briskly pulled out of the aircraft together with the lines and the suspension cable. The canopy cover stripes back from the canopy in the direction of the pole hole and over it, as to load the canopy smoothly and symmetrically and this as well at low as at high speeds. This construction prevents chaotic canopy filling and prevents its damage. It eliminates its damage during the pulling out of the aircraft at the activation and reduces the excessive impact at its opening, restricts asymmetric filling of the canopy.
At some parachute types is the excessive overload at its opening reduced by a slider.
After the burn-up remains the rocket motor hanging on the canopy. The surrounding is not threatened by the falling rocket. The canopy damage influenced by the heating up of the rocket prevents the overlapping of the rocket by the canopy cover, which comes shortly after the rocket motor burn-up, respectively in the time interval, when the whole set is stretched and into the canopy began to flow the air. The canopy cover is made from a material with increased heat resistance.

Balistic device						
Rocket type	Magnum 450	Magnum 450	Magnum 450	Magnum 450	Magnum 450	Magnum 450
Mechanical dual ignition						
Total thrust pulse at 20ºC	0,303 kNS					
Burning time at 20ºC	0,57 ± 0,03	0,6	0,6	0,6	0,6	0,6

						
Magnum	501 Light Speed Soft					
Max. perm. loading (kg)	475					
Max. perm. loading (lbs)	1050					
Weight of system (kg)	9,65					
Weight of system (lbs)	21,3					
V max. (km/h)	300					
V max. (mph)	187					
Dimensions (mm)	360x245x200					
Dimensions (inch)	14.2x9.7x7.9					
Opening time at max. speed/s	3					
Max. overload kN	2,37					
Descend in m/s with max. allowed load	7					
Slider	yes					
Container art	cloth					
Canopy						
Size (m2)	86					
Size (sq.ft)	926					
Repacking period (years)	6					
Balistic device						
Rocket type	Magnum 450					
Mechanical dual ignition						
Total thrust pulse at 20ºC	0,303 kNS					
Burning time at 20ºC	0,6					

All plane recovery systems for experimental aircraft

						
Magnum	601	650	620	800	1200	1220
Max. perm. loading (kg)	759	600	620	800	1200	1200
Max. perm. loading (lbs)	1673	1325	1367	1764	2646	2646
V max. km/h.	320	250	300	250	250	250
V max. mph	198,8	156	187	156	156	156
System weight (kg)	13	17	17	19,5	33	33
System weight (lbs)	28,7	37,4	37,4	43	72,8	72,8
Dimensions (mm)	430x250x210	270x195x610	245x205x430	2 pcs. 501 M	3 pcs. 501 M	2 pcs. 601 M
Dimensions (inch)	16.8x9.8x8,2	10.5x7.6x23.8	9.5x8x16.77	2 pcs. 501 M	3 pcs. 501 M	2 pcs. 601 M
Opening time at max. speed/s	3	3	3	3	3,2	3

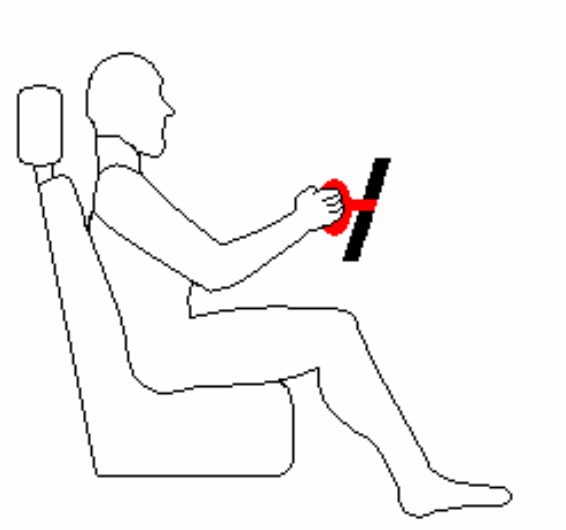
All plane recovery systems for S - LSA aircraft category

						
Magnum	450 SP	450 SSP	450 SP-L	601 S-LSA	601 S-LSA-L	
Max. perm. loading (kg)	500	500	500	607	607	
Max. perm. loading (lbs)	1102	1102	1102	1338	1338	
V max. km/h.	160	160	160	290	290	
V max. mph	99,4	99,4	99,4	180,2	180,2	
System weight (kg)	13	10,5	10,9	13	13,4	
System weight (lbs)	28,7	23,1	24	28,7	29,5	
Dimensions (mm)	Ø206+52x587	280x165x410	520x310x200	430x200x250	520x310x200	
Dimensions (inch)		10.9x6,4x16	20.5x12.2x7.9	16.9x9.9x8.3	20.5x12.2x7.9	
Opening time at max. speed/s	3	3	3	3	3	
Max. overload kN	2,37	2,37	2,37	3,381	3,381	
Descend in m/s with max. allowed load	6,2	6,2	6,2	7	7	
Slider	yes	yes	yes	yes	yes	
Container art	duralumin	cloth	laminated	cloth	laminated	
Canopy						
Size (m2)	102	102	102	130	130	
Size (sq.ft)	1098	1098	1098	1387	1387	
Repacking period (years)	6	6	6	6	6	
Balistic device						
Rocket type	Magnum 450	Magnum 450	Magnum 450	Magnum 600	Magnum 600	
Mechanical dual ignition						
Total thrust pulse at 20ºC	0,303 kNs	0,303 kNs	0,303 kNs	0,539 kNS	0,539 kNS	
Burning time at 20ºC	0,6	0,6	0,6	0,86	0,86	

The firm Stratos 07 produces rescue systems MAGNUM verified by years and practice. At their activation the rocket briskly breaks the hole prepared for this purpose in the aircraft and with a sufficient power reserve pulls out very quickly and gradually the whole parachute. During this process is the canopy protected by the canopy cover before the damage, that could come after a possible contact with the hole in the aircraft or with aircraft wreckage. The canopy cover secures gradual and symmetric loading of the canopy by the air.
Every rescue system is constructed in order to open in a shortest time and to prevent the impact to imperil either the aircraft construction firmness or the crew.

6.2 Location of the launching handle of the rescue system Magnum

- On the handle must reach both pilots
- For the arrangement of pilots sitting one after the other supplies the firm doubled launching for every pilot separately.
- The launching handle must be located so, that both pilots will perceieve it during the flight by their peripheral seeing! Such a location speeds up greatly the rescue system activation!
- Never locate the activation handle out of your visual field in such places as behind your head, on the floor etc.
  At the accident may be the centrifugal power so strong, that it would be over your powers to reach it on such a place.
  From the physiological view has the man the largest strength by banded arms, sitting and in the area round of his lap.
  By the pilot sitting arrangement one beside another it seems to be the best proved the location on the instrument board between both pilots. The handle must be within reach by the hand from the sitting position with the neck leaned in the seat.
  ATTENTION! It must be easily accessible, graspable, not near another adjusting element of similar form, to avoid a confusion and an unintended launching of the rescue system!
- The activation launching Bowden must be after every cc 15cm attached to the aircraft structure, the curve band must be of the largest possible diameter, it must not be violated by a fracture! The smallest permissible Bowden curve is 20cm!
- The handle holder must be anchoraged to a resistant aircraft construction element.
- ATTENTION! Before the flight unlock the rescue system! Immediatelly after the flight do lock it!



PART 7. OPERATIONS BEFORE THE FLIGHT, THE RESCUE SYSTEM ACTIVATION

7.1. Operations before the flight

1) The control of the rescue system anchorage incl. the rocket and the activation handle
2) The control of the cable anchorage to the aircraft, it must be not slack
3) If nothing does prevent the parachute to be smoothly pulled out of the aircraft
4) To unlock the activation handle.

7.2. How and when to activate the rescue system

A) In critical situations activate the rescue system immediately regardless to the flight altitude and terrain character over which you are (e.g. an unavoidable collision resolve by the activation of the system MAGNUM as soon as possible, in the moment before it comes – sufficiently ahead of it!)
B) Ideal action:
   1. Switch off the ignition
   2. Strongly pull the activation handle
   3. Protect with the hands your face, the hands and feet together (the position „roll into a ball“), firm up the whole body!

ATTENTION! It is necessary to fix oneself in this position especially:

   a) by the opening of the parachute!
   b) by the landing!

   4. After the parachute opening shut up the fuel pipe (if there is enough time for it)
   5. Before the shock fasten the safety belt!

C) In the case of really extreme distress pull at first the activation handle and then immediately switch off the ignition and the fuel pipe.
D) The right operations is necessary to train in beforehand.

7.3. How does perceive the crew the activating process

After the activation is heard the rocket motor ignition followed by the sound of leaking gases by the motor nozzle. After it comes gradual retarding of the movement ending by a gentle pulling. It shows that the parachute is loaded. There may follow several swings with a stabilization trend. (Everything depends on the situation, circumstances of the proceeding rescue, on the position and on the altitude. By the activation in a larger altitude you have got a larger chance for the stabilization of the swings and for a smooth landing on the earth.)
The touch with the earth should be such as if you would be unsuccessful by a smooth landing. It depends on the character of the terrain where you are landing.

Stopping of the motor is important in order to prevent the conflict of the suspension cable with the rotating propeller and this especially by aircraft with the propeller in pushing arrangement.
Closing of the fuel feed is necessary to prevent a start of the fire!

! A vital notice: When you pull the activation handle it begins with a lesser resistance. The handle gets loose from the safety position fixed by a flexible picket. It follows a free approximately 5cm long going of the safety cable. Then grows slowly the resistance by the influence of the starting spring stretching. In the moment, when the spring is maximally compressed, gets the percussive device in the upper position loose and strikes two percussion caps, that activate the rocket motor of the rescue system.

Be careful in situations, when you are in a strong updraft. In these cases you must at first get out of it and then use the rescue system.

c)Short landing path
If there‘s no way out and if there threatens on the end of the path some obstacle and the flying up is not possible or safe, you may activate the rescue system in the ground flight near over the earth approximately max. till 1m. But it is necessary to go on in the landing after the firing of the rescue system and to become the aircraft quickly to the earth. In such a situation begins the parachute to brake in the moment, when the wheels touch the earth.

d)Mechanical defect
If a mechanical defect makes impossible the aircraft control or safe landing, there is a reason for the activation of the rescue system MAGNUM. If it is possible choose a propriate terrain for the parachute landing with regard to the high voltage line, the buiding development, the wood, the wind direction, etc.

e)Collision during the flight
Activate your rescue system if possible in the time before it inevitably comes! Here it applies, the earlier you react, the higher will be the chance for rescuing your life! Fractions of a second may decide!

f)Piloting control mistake
To dangerous piloting control mistakes, that may you endanger, comes mostly in small altitudes. The loss of speed, the corcscrew spin, the fall down plane etc.
In such situations you have to react without delay! Even from a small altitude you have a chance to be rescued! Remember, that even a piloting control mistake in a larger altitude may be for you dangerous. Such a transit from a corcscrew spin to a spiral and a spiral itself may be for you dangerous by the sharp speed rise to such a limit, that your rescue system could be inefficient. The altitude lessens in such situations very quickly.
Activate therefore your rescue system as soon as possible!

g)Pilots disability to control the aircraft
It may be health problems as heart attac, injury of the pilot, loss of consciousness ... If it is possible he may activate the rescue system by himself, or his fellow passenger, who must be informed of the rescue system function and use before the flight!

h)Fire on the aircraft deck
It is important to stop the oxygen supply to the flame and also of the material which burns, it is of the fuel. In case you can not immediatelly safely land, activate the rescue system. So you can come on the earth and from the reach of the flames more quick. In case, that it burns in the area of the motor space, or somewhere after the fuel-lock on the line to the motor, lock the fuel supply, let the motor run, open the supply of the mixture feed (open the throttle) to consume the fuel from its line and to stop the burning!

Even because of such situations are favourable cables of steel or of Kevlar. These materials resist the flames more, than e.g. cables on the base of nylon, etc...

PART 8. GUARANTEE AND CONSUMPTION TIME

How to choose a rescue system?

Are you not sure how to choose the right rescue system for your aircraft? When choosing the rescue system follow above all aspecially two values given in the tables - it are the maximal load and the maximum speed.

The maximal take-off weight of your aircraft must not exceed the maximal allowable load of the rescue system.

If the maximum speed of the aircraft (event. Vne the maximum never-exceed speed) exceeds the maximum limiting speed for use of the rescue system, the rescue system may be mounted into the aircraft in such case, that the pilot was in due form informed of the necessity to respect this speed for use of the RS. Both it is not recommended to install rescue systems, that are constructed for an important higher maximum speed and weight than has the aircraft, in which should be installed the rescue system.

The softpack or the container? This depends of the place of the rescue system installation in the aircraft. Rescue systems packed in the softpack are on principle installed inside of the aircraft. Rescue systems packed in a duralminium container are installed mostly outside of the aircraft. In the case, that they are installed inside of the aircraft, or if the rescue system is placed behind a detachable casing, must be this casing sufficiently large to secure after the activation a smooth releasing of the duralminium cover of the rescue system.

Rescue parachute systems for UL

									
MAGNUM		250	250 Softpack	300	300 Softpack	450	450 Softpack	450 Speed	450 Speed Softpack
Maximum permitted load	kg	300	300	325	325	442 / 450	442 / 450	475 / 450	475 / 450
Maximum speed	km/h (MPH)	150	150	220	220	150 / 160	150 / 160	260 / 260	260 / 260
Rescue system weight (including rocket)	kg	8	6,8	9,15	7,75	11,4	9,95	13	11
Dimensions (l x w x h)	mm	Ø183+57x455	280x170x250	Ø183+57x530	270x160x280 210x140x450	Ø204+57x535	280x160x390 240x200x380 200x195x450	Ø206+57x587	280x160x410 200x190x480
Opening time at maximum speed	s	3	3	3	3	2,8	2,8	3	3
Minimum safe deployment altitude (AGL) during horizontal flight	m / km/h	80 / 60	80 / 60	80 / 60	80 / 60	80 / 60	80 / 60	80 / 100	80 / 100
Maximum overload with maximum load	kN	15	15	18	18	22	22	25,5	25,5
Descent with maximum load	m/s	7	7	6,8	6,8	6,3	6,3	7,2	7,2
Sleider		no	no	yes	yes	no	no	yes	yes
Container type		duralumin	cloth	duralumin	cloth	duralumin	cloth	duralumin	cloth
Canopy									
Area	m²	65	65	66	66	102	102	102	102
Repack interval	year	5	5	6	6	5	5	6	6

Ballistic device									
Rocket engine type		Magnum 450	Magnum 450 (Magnum 250)	Magnum 450	Magnum 450	Magnum 450	Magnum 450	Magnum 450	Magnum 450
Total impulse at 20°C	kNS	0,303	0,303 (0,11)	0,303	0,303	0,303	0,303	0,303	0,303
Activation						Mechanical			
Burn time at 20° C in second	s	0,57 ± 0,03	0,303 (0,11)	0,57 ± 0,03	0,57 ± 0,03	0,57 ± 0,03	0,57 ± 0,03	0,57± 0,03	0,57 ± 0,03
Certified by		DULV	DULV	DAeC	DAeC	DULV / LAA	DULV / LAA	DULV / LAA	DULV / LAA

Rescue parachute systems for experimental

									
MAGNUM		601	650	800	901	1200	1201	1220	1800
Maximum permitted load	kg	759	600	800	950	1200	1230	1200	1800
Maximum Speed	km/h	320	250	250	350	250	250	250	260
Rescue system weight (including rocket)	kg	12,4	17	18,5	17,6	28	22	24	35
Dimensions (l x w x h)	mm	245x195x430 250x170x490 200x195x510 410x180x280	270x195x610	2 pcs. M 501	240x280x500	3 pcs M 501	260x300x540	2 pcs M 601	3 pcs M601
Opening time at maximum speed	s	3	3	3	8	3,2	5	3	3,5
Maximum overload with maximum load	kN	30	31	35	-	60	63,5	60	90
Descent with maximum load	m/s	7	5,5	6,7	7,2	7	7,8	6,5	7
Sleider		yes	yes	yes	yes	yes	yes	yes	yes
Container type		cloth	cloth	cloth	cloth	cloth	cloth	cloth	cloth
Canopy									
Area	m²	130	150	172	206	258	252	260	390
Repack interval	year	6	6	6	6	6	6	6	6
Ballistic device									
Rocket engine type		Magnum 600	Magnum 600	Magnum 600	Magnum 1000 (Magnum 1500)*	Magnum 1000	Magnum 1000 (Magnum 1500)*	Magnum 1000	Magnum 1500
Total impulse at 20°C	kNS	0,464	0,464	0,464	0,539 (0,702)	0,539	0,539 (0,702)	0,539	0,702
Activation						Mechanical			
Burn time at 20° C in second	s	0,86 ± 0,03	0,86 ± 0,03	0,86 ± 0,03	0,86 ± 0,03 (0,88 ± 0,04)	0,86± 0,03	0,86 ± 0,03 (0,88 ± 0,04)	0,86± 0,03	0,88 ± 0,04

* It depends on the particular installation

Rescue parachute systems for aircraft category S-LSA

						
MAGNUM		450 Speed	450 Speed Softpack	450 SP-L	601 S-LSA	601 S-LSA-L

Maximum permitted load	kg	500	500	500	607	607
Maximum speed	km/h	210	210	210	290	290
Rescue system weight (including rocket)	kg	13	11	11,8	12,4	13,4
Dimensions (l x w x h)	mm	Ø206+57x587	280x160x410 200x190x480	520x310x200	245x195x430 250x170x490 200x195x510 410x180x280	520x310x200
Opening time at maximum speed	s	3	3	3	3	3
Maximum overload with maximum load	kN	25,5	25,5	25,5	33,81	33,81
Descent with maximum load	m/s	7,2	7,2	7,2	7	7
Sleider	-	yes	yes	yes	yes	yes
Container type	-	duralumin	cloth	laminated (PE/ABS)	cloth	laminated (PE/ABS)
Canopy						
Area	m²	102	102	102	130	130
Repack interval	month	6	6	6	6	6
Ballistic device						
Rocket engine type		Magnum 450	Magnum 450	Magnum 450	Magnum 600	Magnum 600
Total impulse at 20°C	kNS	0,303	0,303	0,303	0,464	0,464
Activation				Mechanical		
Burn time at 20°C in second	s	0,57 ± 0,03	0,57 ± 0,03	0,57 ± 0,03	0,86 ± 0,03	0,86 ± 0,03
Certified by		ASTM –F 2316-03	ASTM –F 2316-03	ASTM –F 2316-03	ASTM –F 2316-08	ASTM –F 2316-08

Rescue parachute for Paragliding and Hang-gliding with rocket engine activated

						
MAGNUM		140	250 Container	250 Softpack	450	450 Softpack
Maximum permitted load	kg	140	300	300	442	442
Descent with maximum load	m/s	6,5	7	7	6,3	6,3
Maximum speed	km/h	140	150	150	150	150
Rescue system weight	kg	3,7	8,95	6,8	11,4	9,95
Dimensions (l x w x h)	mm	220x100x390	Ø183+57x 455	390x170x260	Ø206+57x525	280x160x390 240x200x380 200x195x450
Container type	-	cloth	duralumin	textile	duralumin	cloth
Canopy						
Area	m²	34	66	66	102	102
Repack interval	year	5	5	5	5	5
Ballistic device						
Rocket engine type		Magnum 250	Magnum 450	Magnum 450 (Magnum 250)	Magnum 450	Magnum 450
Total impulse at 20°C	kNS	0,05	0,303	0,303 (0,05)	0,303	0,303
Activation				Mechanical		
Burn time at 20°C in second	s	0,42 ± 0,03	0,57 ± 0,03	0,57 ± 0,03 0,42 ± 0,03	0,57 ± 0,03	0,57 ± 0,03
Certified by		DULV	DULV	DULV	DULV	DULV

Rescue parachute for Paragliding and Hang-gliding

PLUS	25	31	34	35	48	66

Maximum permitted load	kg	90	100	125	100	150	300
Descent with maximum load	m/s	5,5	5,5	5,5	5,5	5,5	5,5
Maximum speed	km/h	150	150	150	150	150	150
Rescue system weight	kg	2,7	3,2	3,5	3,4	4	4,9
Dimensions (l x w x h)	mm	200x280x80	210x290x80	220x300x90	210x290x80	240x320x100	260x340x110
Canopy							
Area	m²	25	31	34	35	48	66
Repack interval	year	6	6	6	6	6	6
Certified by		LAA	LAA	SHV	DULV	LAA	LAA